

REMARKS

Claims 13-19, 21, 23-27, 29 and 31-38 are pending in the application. By this Amendment claims 17, 19, 21, 23, 27 and 29 are amended, claims 20, 22, 28 and 30 are canceled, and claims 33-38 are added. Reconsideration and withdrawal of the rejections in view of the foregoing amendments and the following remarks is respectfully requested.

Applicants note that claims 25, 26 and 32 have been withdrawn from consideration as directed to a non-elected species. However, Applicants respectfully submit that these claims depend from generic claims. To the extent the generic claims are allowed, rejoinder and allowance of claims 25, 26 and 32 are respectfully requested.

I. Claims 13, 15-17, 20, 21 and 27

Claims 13, 15-17, 20, 21 and 27 are rejected under 35 U.S.C. §102(b) over Ryan (US Patent No. 5,004,355). The Office Action also rejects claims 14 and 18 under 35 USC 103(a) over Ryan. By this Amendment, claim 20 is canceled. With respect to the remaining claims, the rejections are respectfully traversed.

A. Claims 13-16

Claim 13 is directed to a process for monitoring the temperature in a refrigerator. Claim 13 recites forming a unit from a temperature sensitive element and a thermal buffer liquid in a substantially transparent container with said temperature sensitive element being in substantially non-insulated contact with said thermal buffer liquid. Claim 13 further recites placing the unit container at a site to be monitored inside the refrigerator, and visually observing said temperature sensitive element as it is in said substantially transparent container to determine if a temperature variable property of the temperature sensitive element indicates that the temperature in the refrigerator is at, below or above a predetermined temperature range.

The Ryan reference discloses a temperature measuring apparatus which includes a thermometer 12 which is mounted inside a receptacle 20. As shown in

Figures 1 and 2 of Ryan, a cap 28 on the receptacle 20 includes a sealable aperture 30. The thermometer is inserted through the aperture 30 so that the bulb and lower portion of the thermometer 12 are immersed in a liquid bath 32 within the receptacle 20. The receptacle 20 and the thermometer 12 are then mounted inside a cover member 36 which is sealed with a cap 42. The cover member 36 with the enclosed receptacle and thermometer are then mounted on the holder 44 which can be attached to an interior of the refrigeration unit.

It is respectfully submitted that the thermometer of the Ryan device does not comprise a temperature sensitive element as recited in claim 13. Further, the portion of the thermometer which provides an indication of temperature is either mercury or alcohol located within the thermometer. The mercury or alcohol in the thermometer is not in non-insulated contact with the thermal buffer liquid of Ryan's device since it is contained within a glass or plastic container which comprises the bulb of the thermometer. For all these reasons, it is respectfully submitted that claim 13 is allowable over Ryan. Claims 14-16 depend from claim 13 and are allowable for at least the same reasons, and for the additional features which they recite.

B. Claims 17, 18 and 21

Independent claim 17 is directed to a unit for monitoring the temperature in a refrigerator. Claim 17 recites a container having a substantially transparent portion, the container being placeable at a site to be monitored inside the refrigerator. Claim 17 recites that a thermal buffer liquid is in said container. Claim 17 further recites a temperature sensitive element in thermal contact with the buffer liquid. Claim 17 indicates that the temperature sensitive element changes from a first color to a second color when a temperature of the buffer liquid changes from below a first threshold temperature to above the first threshold temperature. Claim 17 further recites that the first threshold temperature is above 0°C.

In the Ryan reference, the thermometer does not comprise a temperature sensitive element which changes from a first color to a second color when a

temperature of the buffer liquid changes from below a first threshold temperature to above the first threshold temperature. In fact, it appears that the thermometer, and the mercury or alcohol within the thermometer, never changes color. For at least these reasons, it is respectfully submitted that claim 17 is allowable. Claims 18 and 21 depend from claim 17 and are allowable for at least the same reasons, and for the additional features which they recite.

C. Claim 27

Claim 27 recites a temperature sensitive element for a unit for monitoring the temperature in a refrigerator. Claim 27 recites a temperature sensitive element comprising a body for thermal contact with a buffer liquid. Claim 27 recites that the body is immersed to swim freely in the buffer liquid. Claim 27 further recites that the body exhibits different substantially discrete colors which can be, in an observation event, visually observed to determine if the body is above or below a temperature limit to be monitored, the temperature limit being above 0°C.

In the Ryan reference, the thermometer is never swimming freely within a buffer liquid. Instead, the thermometer is held in a fixed position within the buffer liquid. In addition, the mercury or alcohol within Ryan's thermometer will never change color in response to temperature changes. Accordingly, Ryan lacks a temperature sensitive element that comprises a body which exhibits different substantially discrete colors, as recited in claim 27. For all the above reasons, it is respectfully submitted that claim 27 is allowable over Ryan.

In view of all the foregoing, withdrawal of the rejection of claims 13-18, 21 and 27 is respectfully requested.

II. Claims 19, 22, 28 and 31

Claims 19, 22, 28 and 31 are rejected under 35 USC 103(a) over Ryan, in view of Wu et al. (US Patent Publication No. 2002/0055578). By this Amendment, claims 22

and 28 are canceled. With respect to the remaining claims, the rejection is respectfully traversed.

A. Claim 19

Claim 19 depends from independent claim 17 and includes all the features of claim 17 discussed above. Claim 19 further recites that the temperature sensitive element is located inside the container and that it can swim freely in the buffer liquid.

As explained above, the Ryan reference fails to disclose or suggest a unit for monitoring the temperature in a refrigerator that includes a temperature sensitive element that changes from a first color to a second color, as recited in claim 17.

The Office Action appears to assert that one of ordinary skill in the art would have found it obvious to substitute the material described in the Wu reference for the thermometer used in the Ryan device, and that the resulting combination would include all the features of claim 19. Applicants respectfully disagree.

The present application is directed to devices for sensing the temperature within a refrigerator. As such, the temperature sensor must be capable of indicating temperature changes that occur at temperatures above 0°C.

The material described in the Wu reference would be incapable of indicating temperature changes that occur above 0°C. As is apparent from Figure 3 of the Wu reference, the material described in Wu will have substantially the same color at temperatures between 0°C and 25°C. In fact, multiple portions of the Wu reference indicate that Wu's material is only intended to be used to indicate temperature changes that occur below 0°C. See Wu at paragraphs 11, 18, 19, and 22. For these reasons, it is respectfully submitted that one of ordinary skill in the art would never have thought to replace Ryan's thermometer with the material described in Wu because doing so would result in a device that cannot indicate temperature changes within a refrigerator.

Moreover, Applicants note that Ryan already includes a thermometer which provides a very specific indication of the temperature of the liquid 32 within Ryan's receptacle 20. Because Ryan uses a thermometer, the temperature measuring

apparatus provides an exact indication of the actual temperature of the liquid. It is respectfully submitted that one of ordinary skill in the art, viewing both references, would not have been motivated to replace Ryan's thermometer with the Wu temperature indicating material because doing so would significantly reduce the effectiveness, accuracy and usefulness of Ryan's temperature measuring apparatus.

It is further respectfully submitted that it requires the improper use of hindsight, in view of Applicant's invention to find any motivation for substituting the Wu temperature indicating material for Ryan's thermometer. Neither reference provides any motivation for doing so, and those of ordinary skill in the art would not have thought to make this substitution because doing so would result in either a completely inoperative device, or at the very least, a far less accurate and less useful temperature indicating device. In view of these facts, the only way to find a motivation for making this substitution is through the impermissible use of hindsight, in view of Applicant's invention.

For all the above reasons, it is respectfully submitted that the combination of Wu with Ryan is improper, and that for this reason, the rejection of claim 19 should be withdrawn

B. Claim 31

Claim 31 depends from claim 27 and includes all the features of claim 27 discussed above. As noted above, claim 27 recites a temperature sensitive element for a unit for monitoring temperature in a refrigerator. Claim 27 recites that the temperature sensitive element comprises a body for thermal contact with a buffer liquid, wherein the body is immersed to swim freely in the buffer liquid, and wherein the body exhibits different substantially discrete colors which can be visually observed to determine if the body is above or below a temperature limit to be monitored, that temperature limit being above 0°C.

It is respectfully submitted that the Wu reference cannot be combined with Ryan for all the reasons discussed above in connection with claim 19. Accordingly, it is respectfully submitted that claim 31 is also allowable.

In view of all the foregoing, withdrawal of the rejection of claims 19 and 31 is respectfully requested.

III. Claims 23, 24, 29 and 30

Claims 23, 24, 29 and 30 are rejected under 35 USC 103(a) over Ryan, in view of Wu, and further in view of Witonsky et al. (US Patent Publication No. 2003/0147450). By this Amendment, claim 30 is canceled. With respect to the remaining claims, the rejection is respectfully traversed.

Claims 23 and 24 depend from independent claim 17, and claim 29 depends from independent claim 27. It is respectfully submitted that the combination of Wu and Ryan is improper for all the reasons discussed above. Accordingly, it is respectfully submitted that the rejection of claims 23, 24 and 29 should also be withdrawn.

IV. New Claims 33-38

By this Amendment, claims 33-38 are added to the application. Claims 33-36 all ultimately depend from claim 13, and claims 37 and 38 depend from claim 17. It is respectfully submitted that the new claims are allowable for all the reasons discussed above in connection with claims 13 and 17, and for the additional features which they recite.

IV. Conclusion

In view of the above, entry of the present Amendment, allowance of the pending claims and favorable consideration of withdrawn claims 25, 26, and 32 are respectfully requested. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted

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